difference - where found

Cnidaria | Ctenophora

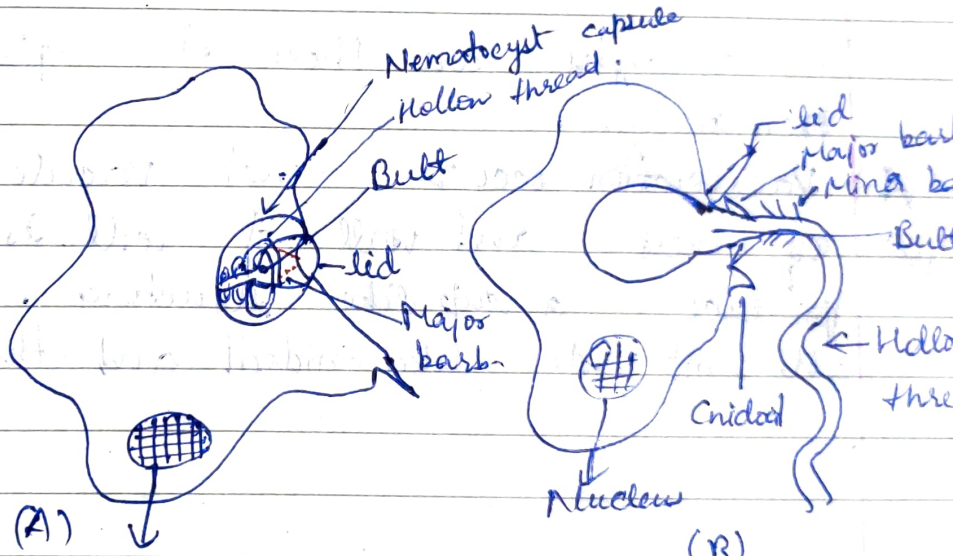
* NEMATOCYST *

- Nematocyst is restricted to phylum cnidaria
- Classification of cnidaria is based on different types of nematocysts
- Nematocyst is distributed to all group of phylum cnidaria and spirocyst is only restricted to group zoantharia.

* Organoid - without formation of tissue, if a single cell can perform a special type of fx then it organoid
* Organ - When tissue is formed and they perform a specific function.

- It is not controlled by nervous system although cnidarians have a diffused type of nerve net i.e. non-nervous control of ~~nervous system~~ nemat

Structure:



Nucleus of cell (nematocyst)

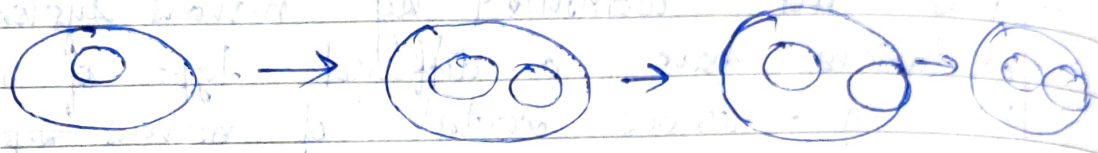
(A) Undischarged cond.
(B) Discharged cond.

- Nematocyst is an organoid.

- Nematocyst is interstitial cell and also a single cell. These cells may be endodermal or ectodermal but nematocyst is always ectodermal interstitial cells.
- 90% of interstitial cells are localised on ectoderm.
- Once used nematocyst is immediately discarded from body. So, there is regular renewal of nemato cyst is required for survival of animal. It is just like the canon of tank. It is Nematocyst is also used for capture food material.

Formation of nematocyst:

1. Vacuolation starts in interstitial cells



Two thoughts are there to explain form^{n} of nematocyst.

(A.) Vacuolation occure and vacule goes to periphery of cell and wall of cell is dissolved and produce a cup like structure. Now in this cup all imp. str. like cnidocil and others are formed.

(B.) All imp. str. are produced inside the valve and then it goes to periphery and wall present from the body.

Structure :-

- A cell capsule is there which bears all the components. There is hollow thread inside which is covered by major and minor barb. There is bulb which pull the major and minor barb. When pressure comes on nematocyst then only nematocyst capsule is discharged.

- Barbs are made up of chitin and inverted bristle like str. also i.e. whole nematocyst capsule. Cnidocil is hook like str. (small microscopic spine) which is made up of chetin.

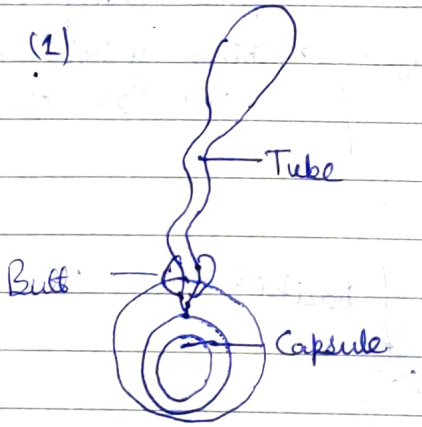
- SIZE OF NEMATO CYST & LOCATION.

i) Smaller = 5 – 50 μm.

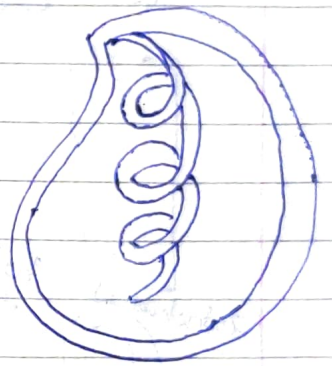
ii) Largest = 1·12 mm (eg. Haberstoma – Siphonophora)

Different type of nematocyst:

~~On the~~ Basic of classification of cnidaria: Type of nematocyst



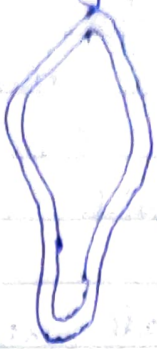
Rhopalonemes
(Tube elongated and sac like)



Desmonemes
(Tube thread like)
(for binding the prey)

NOTE: Nematocyst is of non-nervous control and even a slight touch or any mechanical exitation may lead to it's discharge.

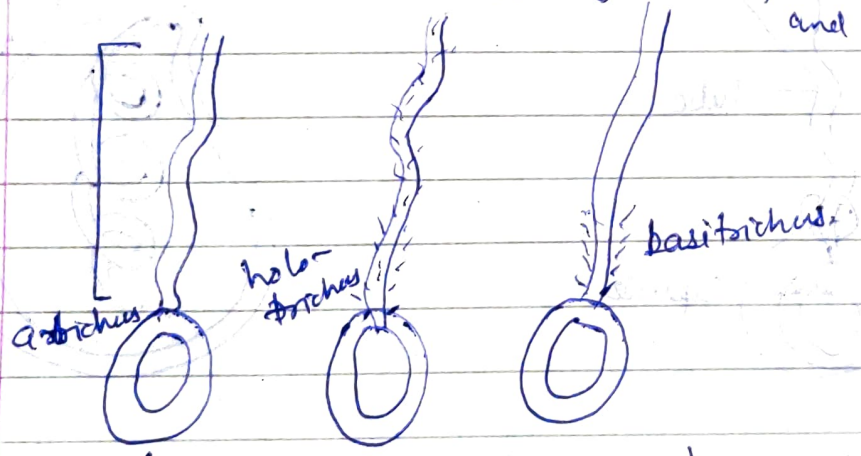
Desmonemc (discharged)
(Showing space with thread)



Holotrichous isorhiza.

(1) Tube closed at end.
(a) Rhopalonemus → Tube elongated.
(b) Desmonemus — Tube thread like forming a coil like is called volvent.

(1) Tube open at tip without Butt (Haplonemus)
(A) Tube of same diameter throughout - Glutinent.
(B) (a) holotrichous isorhiza → Tube spine throughout and of equal size
(b) atrichous isorhiza → Spine lacking.
(c) basitrichous isorhiza. → Spines at base only are larger and other are smaller

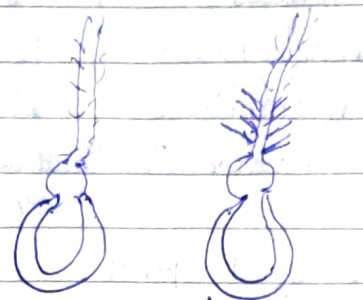


(a) with a prominent cell body having a long tube (5-6 times than cell) without any distributed ends This kind of nematocyst is c/a glutinent

(b) atrichous lacks spine on complete tube.
(c) basitrichous has spine at base.

(2) Tube open at tip with Butt —

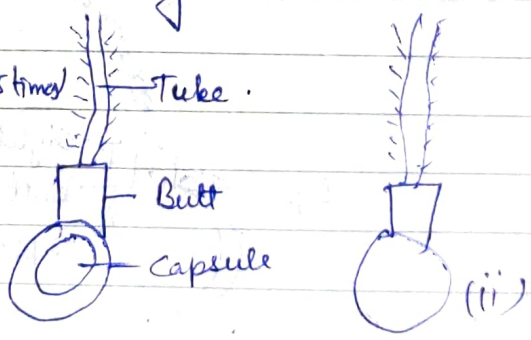
* Both type of nematocyst have uniform distribution of spine but basitrichous has bigger sized spines at base.



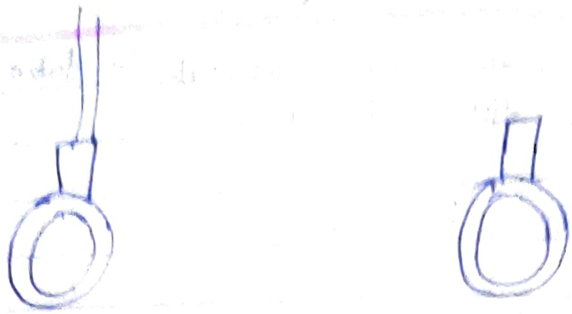
holo — basi —

(3) Tube open at tip with well defined Butt present.
(A) Butt cylindrical of same diameter. 4 types are —
(i) Microbasic mastigophore.
(ii) Macrobasic mastigophore.
(iii) Microbasic amastigophore.
(iv) Macrobasic " .

(i) Butts are not more than 3 times of length of capsule.
(ii) Butts are 4× of length of capsule.
(iii) No tube beyond butt.
(iv) Almost lacking the tube



Mastigophores : Fine spine like str. which is pr. throughout tube only lacking at butt

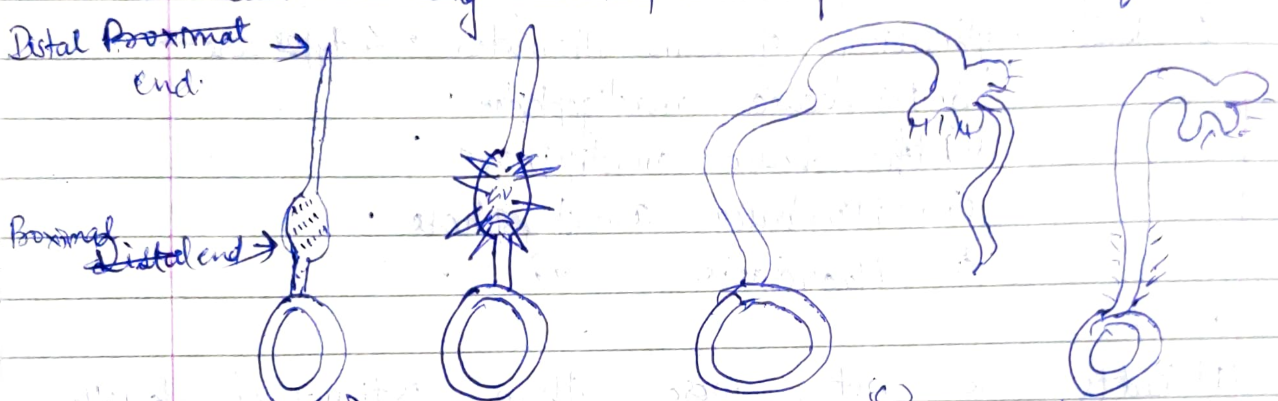


(iv) Butt dilated at the summit — Euryteles.

(a) Homotrichous microbasic
(b) Heterotrichous microbasic
(c) Telotrichous macrobasic
(d) Merotrichous macrobasic

butt is dilated but n't cylindrical shaped. Sometimes butt is connected to capsule by a narrow region.

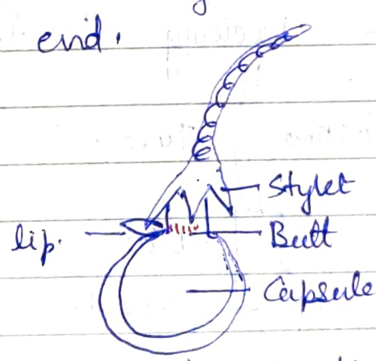
(a) – Butt is small with equal sized spines
(b) – Butt " " " unequal " " (short & long)
(c) – Butt is long with only distal spine.
(d) – Butt is long and spines ~~are~~ present at end of tube.



Telotrichous

– In telotrichous microbasic, butt is tube like and very bigger in size. These spines are pr. at ~~only~~ only distal end.

Stenotele ~ Penetrants.



Stenotele – discharged end.